



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/718,355

11/18/2003

Jianhua Wang

OPT-112

9871

23574

7590

06/15/2005

LAW OFFICE OF ANDREI D POPOVICI
786 LA MESA DRIVE
PORTOLA VALLEY, CA 94028-7464

EXAMINER

KIANNI, KAVEH C

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,355

Applicant(s)

WANG ET AL.

Examiner

Kianni C. Kaveh

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003 and 24 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 19 is/are rejected.
- 7) ☒ Claim(s) 13-18 is/are objected to.
- 8) ☒ Claim(s) 20-22 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

This application contains claims directed to the following patentably distinct species of the claimed invention: I) group invention I, claims 1-19 directed to an optical module including a flexible outer protective tube enclosing the inner protective tube, wherein the inner protective tube and the outer protective tube are longitudinally movable relative to the optical fiber along at least part of the optical fiber in response to environmental temperature changes, to reduce a strain on the optical fiber caused by thermal expansion of the inner protective tube and the outer protective tube; II) claims 20-22 directed to an optical module including an optical fiber fixedly connected to the corresponding optical fiber connector and extending into an interior of the housing, a flexible inner protective tube enclosing the optical fiber and connected to the housing, longitudinally moving the optical fiber varies an extent of the optical fiber present in the interior of the housing.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none of the claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Popovici on 5/24/05 a provisional election was made without traverse to prosecute the invention of I, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims 20-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Allowable Subject Matter

Claims 13-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 13 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious a longitudinal guide disposed over the outer protective tube, for constraining the outer protective tube solely to a longitudinal motion within the housing in combination with the rest of the limitations of the base claim.

Claim 14-16 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein said each of the optical fiber cables comprises a flexible sliding medium disposed between the inner protective tube and the outer protective tube in combination with the rest of the limitations of the base claim.

Claim 17 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious a fused fiber coupler situated within the housing and rigidly connected to the optical fiber in combination with the rest of the limitations of the base claim.

Claim 18 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious an optical component situated within the housing and optically coupled to the optical fiber, the optical component being selected from a group consisting of splitters, isolators, circulators, attenuators, switches, and

Art Unit: 2883

wavelength multiplexing and demultiplexing components in combination with the rest of the limitations of the base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graesser (US 6517253).

Regarding claims 1 and 19, Graesser teaches an optical system (shown in at least fig. 1) comprising:

an optical source 4(wherein the optical fiber 4 is a source of light in the connector);

an optical receiver 16;

Art Unit: 2883

an optical module package 1 optically connecting the optical source 4 to the optical receiver 16,

the optical module package 1 comprising a housing 24; a plurality of optical fiber connectors including a first connector 48/21 connected to the optical source 4 (see fig. 1, item waveguide 4 as means of optical light source connected by first connection means 28/21), and a second connector 15 connected to the optical receiver 16 (see fig. 1, items 15 and 16, and col. 7, 3rd-4th parag.); and a plurality of optical fiber cables 36/37, each of the optical fiber cables 36/37 connecting the housing 24 and a corresponding optical fiber connector 14/15, said each of the optical fiber cables 36/37 comprising an optical fiber rigidly connected to the housing 24 and to the corresponding optical fiber connector 32/33,

a flexible inner protective tube 8/9 enclosing the optical fiber 36/37, and a flexible outer protective tube 17/18 enclosing the inner protective tube 8/9, wherein the inner protective tube and the outer protective tube are longitudinally movable relative to the optical fiber along at least part of the optical fiber (see abstract).

However, Graesser does not specifically teach wherein the above movement of the tubes relative to the fiber occurs in response to environmental temperature changes, to reduce a strain on the optical fiber caused by thermal expansion of the inner protective tube and the outer protective tube. Although this limitation is a functional limitation and not necessarily the examiner gives patentable weight nonetheless, it would have been obvious to a person of ordinary skill in the art when the invention was made that the above tubes have inherently certain thermal expansion characteristics in

Art Unit: 2883

which they are functional and they operate in certain temperatures and one of ordinary skill in the art can choose the material of the tubs as a matter of choice to have certain thermal characteristics, and since such optical module would prevent inadvertent unplugging of the module connector through improper handling (see col. 1, 2nd parag.).

Regarding claims 2-12, Graesser further teaches wherein the inner protective tube comprises at least two distinct segments separated by a longitudinal gap (shown in figure 1, item 8 its segments are separated axially with a gap); wherein the inner protective tube 8/9 comprises an inner tube region situated within the housing 2 and longitudinally movable relative to the housing (see abstract); wherein a region of the inner protective tube 9 proximal to the corresponding optical fiber 37 connector 33 is rigidly connected to the corresponding optical fiber connector 33; wherein the outer protective tube 18 comprises an outer tube region situated within the housing and longitudinally movable relative to the housing 2 (see abstract); wherein a region of the outer protective tube proximal to the corresponding optical fiber connector is longitudinally movable relative to the corresponding optical fiber connector (see abstract); wherein a region of the inner protective tube proximal to the corresponding optical fiber connector is longitudinally movable relative to the corresponding optical fiber connector (see fig. 1, items 9 and 33 and abstract); wherein the inner protective tube 9 comprises an inner tube region situated within the housing 2 and rigidly connected to the housing 2; wherein the outer protective tube 18 comprises an outer tube region situated within the housing and longitudinally movable relative to the

Art Unit: 2883

housing 2 (see also abstract); wherein a region of the outer protective tube 18 proximal to the corresponding optical fiber connector is longitudinally movable relative to the corresponding optical fiber connector 33 (see fig. 1, items 18 and 33, and abstract); wherein the outer protective tube comprises a outer tube region situated within the housing and longitudinally movable relative to the housing (see fig. 1, items 18 and 33, and abstract); wherein a region of the outer protective tube proximal to the corresponding optical fiber connector is longitudinally movable relative to the corresponding optical fiber connector (see fig. 1, items 18 and 33, and abstract);

Citation of Relevant Prior Art

Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Foster 6394662

Ohtsuka et al. 6293708

Dean et al. 6688782

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

Art Unit: 2883

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for formal communications intended for entry)

or:

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



K. Cyrus Kianni
Patent Examiner
Group Art Unit 2883

June 7, 2005